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Protein

Genome

Structure

PopSet

Taxonomy

OMIM

Search

PubMed

for

Limits

Preview/Index

History

Clipboard

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Overview
Help | FAQ
New/Noteworthy

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Journal Browser
MeSH Browser
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Batch Citation Matcher
Clinical Queries
Cubby NEW

Related Resources
Order Documents
Grateful Med
Consumer Health
Clinical Alerts
ClinicalTrials.gov

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☐ 1: *Clin Chim Acta* 1982 Jul 1;122(2):189-202

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Method for the simultaneous determination of cadmium and zinc in whole blood by atomic absorption spectrophotometry and measurement in normotensive and hypertensive humans.

Tulley RT, Lehmann HP

A method is described for the analysis of whole blood cadmium and zinc by extraction and atomic absorption spectrophotometry, in which cadmium is analyzed using a graphite furnace, and zinc using an air-acetylene flame with a single slot burner, after dilution of the extract. Recoveries for cadmium and zinc were 100% and 106%, respectively. For cadmium the day-to-day and within-run coefficients of variation were all less than 13% at low concentrations (approximately 27 nmol/l) and 6% or less at high concentrations (approximately 89 nmol/l). For zinc the coefficients of variation for day-to-day and within-run analyses were less than 6% at low (approximately 76 μmol/l) and high concentrations (approximately 138 μmol/l). The sensitivity of the procedure is 0.5 nmol/l for cadmium and 1.2 μmol/l for zinc. Whole blood from 72 normotensive volunteers, 56 treated hypertensives, and 15 untreated hypertensives were analyzed using this method. Cadmium levels were elevated in smokers but not significantly affected by age or sex. Zinc levels were higher in males than in females, but not significantly affected by smoking. Levels of cadmium and zinc were increased in treated hypertensives and greater still in untreated hypertensives. Significant elevations were found for cadmium in treated hypertensive females who smoked, treated and untreated hypertensive male non-smokers, and for the cadmium to zinc ratio in these latter two groups.

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Abstract

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